



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,700	09/25/2003	Eduard K. de Jong	SUN040023	9228
24209 7590 10/19/2007 GUNNISON MCKAY & HODGSON, LLP 1900 GARDEN ROAD SUITE 220 MONTEREY, CA 93940			EXAMINER SHAN, APRIL YING	
			ART UNIT 2135	PAPER NUMBER
			MAIL DATE 10/19/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/672,700

Applicant(s)

DE JONG, EDUARD K.

Examiner

April Y. Shan

Art Unit

2135

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) 8-15, 23-30, 38-45 and 53-63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 16-22, 31-37 and 46-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 5/07 and 9/07.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

1. The Applicant's amendment, filed 23 July 2007, has been received, entered into the record, and respectfully and fully considered.
2. As a result of the amendment claim 31 and 34-35 have been amended. Claims 1-7, 16-22, 31-37 and 46-52 are now presented for examination.
3. Any objection/rejection not repeated below has been withdrawn due to Applicant's amendment.

### ***Election/Restrictions***

4. Applicant's election with traverse of Group I (claims 1-7, 16-22, 31-37 and 46-52) in the reply filed on 25 January 2007 is acknowledged. The traversal is on the ground(s) that subcombination characterization in the action is incorrect and failed to recognize the proper relationship between the claims.

This is not found persuasive because:

On page 2 of the Applicant's argument, the Applicant argues "The Group II claims are directed at a method for making such an obfuscated application program" and on page 3 of the Applicant's argument, the Applicant argues, "The group II claims recited a method of making such an encoded opcode and group III claims at the product. Thus the subcombination characterization in the action is incorrect...which is required by the Rules...product, process of making, and process of using..."

The examiner respectfully responds that, group II claims recite a method of **“creating an opcode value encoding scheme”** (Please see pages 69, 73, 77 and 80 of the original claims). Thus, contrary to the Applicant’s argument, Group II claims are **not** a method of making such an encoded opcode and **not** a method of method for making such an obfuscated application program.

Additionally, the examiner respectfully points out, group III claims recite a memory storing a data structure, which **includes information used by** the application program execute an obfuscated application program (Please see page 82 of the original claims). Therefore, contrary to the Applicant’s argument, Group II claims are **not** a product.

Therefore, the process of making and product are not presented in the Group II and Group III claims as the Applicant argues. The subcombination characterization in the action is correct and claims 8-15, 23-30, 38-45, 53-60 and 61-63 are withdrawn from consideration.

The requirement is still deemed proper and is therefore made FINAL.

### ***Specification***

5. The disclosure is objected to because of on page 18, paragraph [0015], “The process can be implemented as instructions executed by such hardware, hardware alone, or any combination thereof. The software...readable by a machine”. It appears to the examiner that the sentence is contradicted to itself. If only hardware alone, where is any combination thereof. The examiner assumes the Applicant meant “The process

can be implemented as instructions executed by such software, hardware alone, or any combination thereof...." Appropriate correction is required.

On page 34 of the remark, the Applicant explained argues "... hardware that does not reply upon executing code, e.g., an ASIC". What is ASIC? Please clarify. Further, ASIC is not supported in the original disclosure. Therefore, the objection is maintained.

6. On page 7 of the remark, the Applicant requests to "replace paragraph [0040] with the following rewritten paragraph [0040]". However, in the replacement paragraph [0040], the Applicant discloses "...in virtual machine 491 and a **second portion 484** in smart card 425... **First portion 484** uses secret 425... **Second portion 482**. It appears to the examiner that the Applicant confused himself on the first portion and second portion. Please correct.

7. **This is not intended to be a complete list of objections to the replacement specification. Applicant is required to review and correct the specifications to place them in compliance.**

#### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-2, 4, 16-17, 19, 31-32, 34 and 46-47, 49 are rejected under 35 U.S.C. 102(e) as being anticipated by Zeman et al. (U.S. Pub. No. 2004/0003264).

As per **claims 1 and 31**, Zeman et al. discloses a method/apparatus for executing an obfuscated application program, the method/apparatus comprising:

receiving an obfuscated application program, said obfuscated application program comprising at least one instruction opcode value encoded using one of a plurality of instruction set opcode value encoding schemes ("Sometime before an obfuscated function is called, it must be deobfuscated..." – e.g. par. [0082], "At step 902, the deobfuscation process is triggered. Deobfuscation is triggered at some point in time before the function is called" – e.g. par. [0083], par. [0073]- [0077] and Fig. 8);

determining a dispatch table associated with said application program, said dispatch table corresponding to said one of a plurality of instruction set opcode value encoding schemes ("The original bytes, and their offsets into the function, are saved in a table so that the function can later be "de-obfuscated" by restoring they bytes to their original values" – e.g. par. [0006], "At step 810, a healing table (e.g., healing table 600, shown in Fig. 6) is created to aid in the deobfuscation of code prior to its execution...At step 812, the healing table is added to the executable..." – e.g. par. [0078] – [0079]); and

executing said application program using said associated dispatch table ("The deobfuscation routine consults the table and restores the replaced bytes in the function

Art Unit: 2135

to their original values" – e.g. par. [0008] , "...This pre-obfuscation value is determined, preferably, by looking up the value on healing table 600...At some subsequent point, the function is called (step 912), and execution of the function proceeds (step 914) – e.g. par. [0084] and fig. 9. Please note healing table 600 corresponds to Applicant's dispatch table).

As per **claims 2 and 32**, Zeman et al. discloses a method/apparatus as applied above in claims 1 and 31 above. Zeman et al. further discloses wherein said determining comprises generating said dispatch table in response to said receiving ("While step 810 is shown below step 808 in Fig. 8, it should be noted that the healing table does not have to be created subsequent to the replacement of bytes in the original code. In fact, the healing table is preferably created while the bytes are being replaced).

As per **claims 16-17**, Zeman et al. discloses the claimed method of steps as applied above in claims 1-2. Therefore, Zeman et al. discloses the claimed program of instructions embodied in a program storage device for carrying out the method of steps.

As per **claims 46-47**, they are rejected using the same rationale as rejecting claims 31-32 above.

As per **claims 4 and 34**, Zeman et al. discloses a method/apparatus for executing an obfuscated application program, the method/apparatus comprising:

receiving an obfuscated application program, said obfuscated application program comprising at least one instruction opcode value encoded using one of a plurality of non-standard instruction set opcode value encoding schemes ("In a preferred embodiment, healing table 600 is stored...in a "scrambled" form....For example, healing table 600 can be XOR'd with a known value. This XOR technique allows the content of healing table 600 to be recovered easily, while making its presence within executable 10(1) somewhat more obscure than it would be if healing table 600 were stored in the clear" – e.g. par. [0071] and fig. 7. Please note "scrambled" healing table corresponds to Applicant's non-standard instruction set opcode value);

determining an instruction set opcode value encoding scheme associated with said obfuscated application program ("The original bytes, and their offsets into the function, are saved in a table so that the function can later be "de-obfuscated" by restoring their bytes to their original values" – e.g. par. [0006], "At step 810, a healing table (e.g., healing table 600, shown in Fig. 6) is created to aid in the deobfuscation of code prior to its execution...At step 812, the healing table is added to the executable..." – e.g. par. [0078] – [0079]);

rewriting said application program using a standard opcode value encoding scheme if said received application program is not encoded using said standard opcode value encoding scheme ("An example of an executable rewritten according to step 812 is discussed above in connection with Fig. 7" – e.g. par. [0079]; and



executing said application program using a dispatch table associated with said standard opcode value encoding scheme ("The deobfuscation routine consults the table and restores the replaced bytes in the function to their original values" – e.g. par. [0008] , "... This pre-obfuscation value is determined, preferably, by looking up the value on healing table 600... At some subsequent point, the function is called (step 912), and execution of the function proceeds (step 914) – e.g. par. [0084] and fig. 9. Please note healing table 600 corresponds to Applicant's dispatch table).

As per **claim 19**, Zeman et al. discloses the claimed method of steps as applied above in claim 4. Therefore, Zeman et al. discloses the claimed program of instructions embodied in a program storage device for carrying out the method of steps.

As per **claim 49**, it is rejected using the same rationale as rejecting claim 34 above.

10. Claims 5-6, 20-21, 35-36 and 50-51 are rejected under 35 U.S.C. 102(e) as being anticipated by Kiddy (U.S. Patent No. 6,694,435)

As per **claims 5 and 35**, Granger et al. discloses a method/apparatus for application program obfuscation, the method/apparatus comprising:

reading an application program comprising code (e.g. col. 5, lines 5-25);

transforming said application program code into transformed application program code that uses one of a plurality of opcode value encoding schemes of a dispatch table

Art Unit: 2135

associated with said application program (e.g. col. 5, lines 45-67 and col. 6, lines 1-47); and

sending said transformed application program code (e.g. col. 7, lines 13-30).

As per **claims 6 and 36**, Kiddy discloses a method/apparatus as applied above in claims 5 and 35. Kiddy further discloses comprising receiving an application program request from a user device, said transforming occurring in response to said receiving (e.g. col. 6, lines 15-65 and col. 7, lines 13-30).

As per **claims 20-21**, Kiddy discloses the claimed method of steps as applied above in claims 5-6. Therefore, Kiddy discloses the claimed program of instructions embodied in a program storage device for carrying out the method of steps.

As per **claims 50-51**, they are rejected using the same rationale as rejecting claims 35-36 above.

### ***Claim Rejections - 35 USC § 103***

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 3, 18, 33 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zeman et al (U.S. Pub. No. 2004/0003264)

As per **claims 3 and 33**, Zeman et al. discloses a method/apparatus as applied above in claims 1 and 31 above. Zeman et al. does not expressly disclose wherein said determining comprises selecting a dispatch table from a plurality of dispatch tables in response to said receiving, said plurality of dispatch tables stored in a memory.

The examiner takes official notice that selecting a table from a plurality of tables is common knowledge in the art at the time of the invention.

It would have been obvious to a person with ordinary skill in the art at the time of the invention to combine the above common knowledge into Zeman et al.'s method/apparatus.

The motivation of doing so would have been to select the right table in order to "consults the table and restores the replaced bytes in the function to their original

Art Unit: 2135

values" since "the table contains the original byte values", as disclosed by Zeman et al. (par. [0008])

As per **claims 18**, Zeman et al. discloses the claimed method of steps as applied above in claims 3. Therefore, Zeman et al. discloses the claimed program of instructions embodied in a program storage device for carrying out the method of steps.

As per **claims 48**, it is rejected using the same rationale as rejecting claim 33 above.

14. Claims 7, 22, 37 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiddy as applied to claims 5 and 35 above, and further in view of Drake (U.S. Patent No. 6,006,328).

As per **claims 7 and 37**, Kiddy discloses a method/apparatus as applied above in claims 5 and 35. Kiddy does not expressly disclose using encryption.

However, Drake discloses after said creating, applying a cryptographic process to said obfuscated application program together with a cryptographic key to create an encrypted obfuscated application program; and said sending comprises sending said encrypted obfuscated application program (e.g. fig. 6, col. 4, lines 40-67, col. 5, lines 1-35, col. 16, lines 1-67).

It would have been obvious to one with ordinary skill in the art at the time of the invention to incorporate encryption with the method/apparatus of Kiddy.

The motivation of doing so would have been to provide further security to the application (Drake, summary).

As per **claim 22**, Kiddy-Drake disclose the claimed method of steps as applied above in claim 7. Therefore, Kiddy-Drake disclose the claimed program of instructions embodied in a program storage device for carrying out the method of steps.

As per **claim 52**, it is rejected using the same rationale as rejecting claim 37 above.

### ***Double Patenting***

15. Claims 1-7, 16-22, 31-37 and 46-52 are provisionally rejected under the judicially created doctrine of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-48 of copending Application No. 10/672,183. Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is also claimed in the referenced copending application.

16. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

17. The subject matter claimed in the instant application is fully claimed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

The instant application claims a method for executing an obfuscated application program, the method comprising: receiving an obfuscated application program, said obfuscated application program comprising at least one instruction opcode value encoded using one of a plurality of instruction set opcode value encoding schemes;

determining a dispatch table associated with said application program, said dispatch table corresponding to said one of a plurality of instruction set opcode value encoding schemes; and executing said application program using said associated dispatch table (Claim 1).

The copending application claims a method for executing an obfuscated application program, the method comprising: receiving an obfuscated application program, said obfuscated application program comprising at least one instruction opcode value encoded using one of a plurality of instruction set opcode value encoding schemes; receiving an application program instruction corresponding to a current instruction counter value; selecting an instruction dispatch table based at least in part on said current instruction counter value; and executing said application program instruction using said selected instruction dispatch table (Claim 1).

18. Claims 1-7, 16-22, 31-37 and 46-52 of the instant application are envisioned by copending Application No. 10/672,183's claims 1-48 in that claims 1-48 of the copending application contain all the limitations of claims 1-7, 16-22, 31-37 and 46-52 of the instant application therefore are not patently distinct from the copending application claims and as such are unpatentable for obvious-type double patenting because it would have been obvious to do the obfuscation in copending application conditional to some event and/or using a table to select/permute instructions.

19. Claims 1-7, 16-22, 31-37 and 46-52 are provisionally rejected under the judicially created doctrine of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-52 of copending Application No. 10/673,021. Although the

Art Unit: 2135

conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is also claimed in the referenced copending application.

20. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

21. The subject matter claimed in the instant application is fully claimed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter

22. Claims 1-7, 16-22, 31-37 and 46-52 of the instant application are envisioned by copending Application No. 10/673,021's claims 1-48 in that claims 1-52 of the copending application contain all the limitations of claims 1-7, 16-22, 31-37 and 46-52 of the instant application therefore are not patently distinct from the copending application claims and as such are unpatentable for obvious-type double patenting because it would have been obvious to do the obfuscation in copending application conditional to some event and/or using a table to select/permute instructions.

### ***Response to Arguments***

23. Applicant's argument filed on 23 July, 2007 have been respectfully and fully considered but they are not persuasive.

➤ Applicant argues:

"Zeman fails to teach that the opcode instruction value was "encoded using one of a plurality of instruction set opcode value encoding schemes" (see page 38, Applicant Argument/Remarks).

Examiner maintains:

First, the examiner acknowledges that the Applicant agrees with the examiner that Zeman teaches "at least one instruction opcode value (see page 38, Applicant Argument/Remarks)

Second, Zeman teaches in par. [0073]-[0077] "...replacing randomly selected bytes with one-byte **instructions**. Thus, setp 804 preferably comprises creating a **list of one-byte instructions** that can be used to replace the randomly selected bytes... At step 808, the bytes selected for change at step 806 are replaced with new bytes... these new bytes are preferably taken from **the list of one-byte instructions** for the platform on which the code will operate. Typically, these bytes will be chosen from the list created at step 804.

Therefore, Zeman discloses encoded using one of a plurality of instruction set opcode value encoding schemes.

➤ Applicant argues:

"Kiddy fails to disclose a dispatch table" (page 41 of the remark).

Examiner maintains:



Kiddy teaches in col. 6, lines 24-47, "**Fig. 7** shows a detailed example of interleaving parts from two streams into an obfuscated stream....**Stream 720** is a **stream** of byte codes for the purpose of obfuscation. Stream 720 may be a **stream** of byte codes...of the **same class...another class... Stream 720** can be broken into parts 722, 724, 726 and 728..."

Therefore, Kiddy discloses a dispatch table.

➤ Applicant argues:

"..Claims 2, 17, 32 and 47... The rejection failed to cite any teaching that ...is performed in response to receiving an obfuscated application program as recited in these claims", (remark page 39), the examiner respectfully disagree.

First, claims 2, 17, 32 and 47 are either dependent or similar claims of claims 1 and 5. Since the arguments for the independent claims 1 and 5 are traversed, therefore, claims 2, 17, 32 and 47 are also not allowable.

Second, "is performed in response to receiving an obfuscated application program" is disclosed in par.[0078] of Zeman ("While step 810 is shown below step 808 in Fig. 8, it should be noted that the healing table does not have to be created subsequent to the replacement of bytes in the original code. In fact, the healing table is preferably created while the bytes are being replaced).

➤ Applicant argues:

"Claims 6, 21, 36 and 51...distinguishes over Kiddy at least for the same reason as the independent claim from which it depends" (remark page 41), the examiner respectfully disagree:

Since the arguments for the independent claim 5 is traversed and claims 6, 21 and 36 and 51 are dependent/similar claims, they are also not allowable.

➤ Applicant argues:

"Applicant respectfully traverses the use of Official knowledge ...claim 3 does not recite simply a table, but rather a specific table...", the examiner respectfully disagrees.

First, claims 3, 7, 18, 22, 33, 37, 48 and 52 are either dependent or similar claims of claims 1 and 5. Since the arguments for the independent claims 1 and 5 are traversed, therefore, claims 3, 7, 18, 22, 33, 37, 48 and 52 are also not allowable.

Second, the Applicant is respectfully reminded that Zeman discloses a dispatch table in claim 1. Therefore, the official notice is appropriate in applied to selecting a dispatch table from a plurality of dispatch table. The claims would have been obvious because selecting a dispatch table from a plurality of dispatch table is particular known

technique and it was recognized as part of the ordinary capabilities of one skill in the art. Please see *KSR, 82 USPQ2d at 1397*.

- Applicant's argument on traversing nonstatutory obviousness type double patenting rejection in view of claims 1-48 of co-pending application 10/672,183 and in view of claims in the co-pending application 10/673,021 is acknowledged, it is not persuasive at this time.

The limitations "using a current instruction counter value" in the co-pending application are obvious to a person with ordinary skill in the art in comparison with the current application. Further, the limitation "a dispatch table" in the instant application is obvious to a person with ordinary skill in the art in comparison with the co-pending application 10/673,021.

Although the conflicting claims are not identical, they are not patentably distinct from each other and encompass the same subject matter.

Therefore, due to the above reasons, the examiner maintains the double patenting rejection.

### ***Conclusion***

24. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

Art Unit: 2135

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

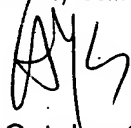
Art Unit: 2135

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to April Y. Shan whose telephone number is (571) 270-1014. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y. Vu can be reached on (571) 272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
14 October 2007  
AYS

  
KIM VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100